

ABSTRACT

A packet switching fabric includes means forming a data ring, means forming a control ring, and means forming a plurality of data communication network links each having at least one network node coupled thereto. The fabric further includes a plurality of output queuing controlled switching devices coupled together by the data ring means and the control ring means so that the network links can be selectively communicatively coupled. Each of the output queuing controlled switching devices includes control ring processing means operative to develop, transmit and receive control messages to and from adjacent ones of the devices via the control ring means. The control messages provide for controlling packet transfer operations including transmitting associated selected ones of the received data packets from the associated source device to the associated destination device via an associated source-destination channel path including associated ones of the data ring segments and an associated one of the memory unit links. A channel resource patrol message is passed by each one of the devices, the patrol message carrying channel bandwidth information indicative of bandwidth available on the data ring means and bandwidth available on memory unit links. The control ring processing means is responsive to the channel bandwidth information and operative to read and modify the channel bandwidth information for the purpose of managing data transfer via the data ring means and via each of the memory unit links.